

Simulation Models to Test Improvement Proposals in Land Administration Before Investing [Special reference to Developing Countries]

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Key words: Capacity building; Implementation of plans; Land management; Land administration; simulation models

SUMMARY

Much development assistance has gone and is going into improving Land Administration (LA) in developing countries. However, both the literature and anecdotal comments indicate that widespread success and sustainability is elusive. This paper offers a potential solution to increase success and sustainability.

Simulation models, are used routinely by many organisations to develop and test business plans before committing the necessary investment. To the author's knowledge this does not occur in LA in developing countries, and represents a Capability Gap.

This paper shows how Simulation models (digital twins) can be built and used to test proposed improvements for effectiveness and sustainability, before the final investment decision is made.

Effectiveness is deemed to be the achievement of project objectives, and sustainability is maintaining the objectives with allocated in-country budgets. Using digital twins will close the Capability Gap and be a new tool for the LA Toolbox. The simulation approach used is Strategy Dynamics (SD), Warren (2009).

The paper also shows how a digital twin can be used during project implementation as a living business model to assist M&E (monitoring and evaluation), and to assess proposed refinements. How digital twins add value to current approaches is indicated.

Illustrative examples applying the SD approach cover:- removing a backlog in a LR (land registry); increasing quality (in a LR), winning back customers, and achieving sustainability by using a % of increased revenue for budget supplementation; increasing quality where quality is composed of

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subcomponents under the control of different agencies; the raising of development capital, by banks accepting titles as collateral.

[Full details of the SD Approach and each illustrative example are in the e-book, Land Administration: Improve Performance by Testing, A Strategy Dynamics Approach, Special Reference to Developing Economies, Lyons K (2022), <https://landadminsistemas.com>]

How this paper fits the conference theme of Protecting Our World, Conquering New Worlds

The use of simulation models in LA will contribute to the success of projects aimed at increasing tenure security, thereby protecting land and contributing to protecting our world. In particular it will contribute to the work of Commission 7 in Implementing the Framework for Effective Land Administration (FELA).

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